Listing of Claims

1. (Original) A plasma processing method, comprising:
confining a plasma with a confinement ring;
processing a substrate with said plasma; and
moving said confinement ring in a linear direction during said processing in order to effect said processing.

2. (Original) The method as recited in claim 1 wherein said confinement ring is moved via a gear drive assembly.

3. (Original) The method as recited in claim 1 wherein said confinement ring is moved in said linear direction in order to control a pressure at a surface of said substrate during said processing.

4. (Original) The method as recited in claim 3 wherein said confinement ring is moved in a first linear direction to increase the pressure at the surface of said substrate during said processing, and wherein said confinement ring is moved in a second linear direction opposite the first linear direction to decrease the pressure at the surface of said substrate during said processing.

5. (Original) The method as recited in claim 1 wherein a gap is provided between said confinement ring and a plane defined by said substrate during said processing, and wherein the size of said gap is changed during said processing by moving said confinement ring in said linear direction, the size of said gap effecting said processing.

6. (Original) The method as recited in claim 1 wherein an etching task is employed in said processing to selectively remove materials from predefined areas on a surface of said substrate.

7. (Original) The method as recited in claim 1 wherein a deposition task is employed in said processing to selectively deposit materials on predefined areas on a surface of said substrate.

8. (Original) The method as recited in claim 1 wherein said substrate is held stationary during said processing.

9. (Original) The method as recited in claim 1 further comprising:
monitoring a process condition above said substrate during said processing; and
moving said confinement ring based on the monitored process condition.

10. (Currently Amended) The method as recited in claim [1] 9 wherein the process condition ~~includes temperature or~~ is pressure.

11. (Original) The method as recited in claim 1 further comprising:
producing an electric field with an electrode; and
moving said electrode in said linear direction during said processing in order to effect said processing.

12. (Original) The method as recited in claim 11 wherein said electrode is moved in said linear direction in order to adjust the volume of an active region located above said substrate.

13. (Original) The method as recited in claim 11 wherein a gap is provided between said electrode and a plane defined by said substrate during said processing, said gap defining a process region in which said plasma is both ignited and sustained for processing, and wherein the size of said gap is changed during said processing by moving said electrode in said linear direction, the size of said gap controlling a volume of said process region.

14. (Currently Amended) The method as recited in claim [9] 11 wherein the confinement ring and electrode are moved via a gear drive assembly.

15. (Currently Amended) The method as recited in claim [9] 11 wherein the confinement ring and electrode are independently moved during said processing.

16. (Original) A plasma processing method, comprising:
producing an electric field with an electrode;
processing a substrate with a plasma; and

moving said electrode in a linear direction during said processing in order to effect said processing.

17. (Original) The method as recited in claim 16 wherein said electrode is moved via a gear drive assembly.

18. (Original) The method as recited in claim 16 wherein said electrode is moved in said linear direction in order to adjust the volume of an active region located above said substrate.

19. (Currently Amended) The method as recited in claim 16 wherein a gap is provided between said electrode and a plane defined by said substrate ~~when said substrate~~ during said processing, said gap defining a process region in which said plasma is both ignited and sustained for said processing, and wherein the size of said gap is changed during processing by moving said electrode in said linear direction, said gap controlling a volume of said process region.

20. (Original) The method as recited in claim 18 wherein said electrode is disposed above or below said substrate during processing, and wherein said electrode is coupled to an RF power supply that supplies said electrode with RF energy.

21. (Original) The method as recited in claim 16 further comprising:
monitoring a process condition above said substrate during said processing; and
moving said electrode based on the monitored process condition.

22. (Original) The method as recited in claim 16 further comprising:
confining said plasma with a confinement ring;
independently moving said confinement ring and said electrode in said linear direction during said processing in order to effect said processing.

23. (Original) The method as recited in claim 22 wherein said electrode is moved in said linear direction in order to adjust the volume of an active region located above said substrate and wherein said confinement ring is moved in said linear direction in order to control a pressure at a surface of said substrate during said processing.

24. (Original) The method as recited in claim 23 further comprising:

monitoring a process condition above said substrate during said processing; and

moving said electrode and said confinement ring based on the monitored process condition.

25. (Currently Amended) A method of moving a confinement ring or electrode inside a plasma process chamber, comprising:

rotating a first gear;

rotating a second gear via said rotating first gear when said first gear is operatively engaged with said second gear;

moving a shaft along a linear path via said rotating second gear, said shaft moving in a first direction when said first gear is rotated clockwise, said shaft moving in a second direction when said first gear is rotated counterclockwise; and

moving said confinement ring or electrode up and down along said linear path via said moving shaft.

26. (New) The method as recited in claim 25 further comprising:

rotating a third gear via said first rotating gear when said first gear is operatively engaged with said third gear;

moving a second shaft along a linear path via said rotating third gear, said second shaft moving in a first direction when said first gear is rotated clockwise, said shaft moving in a second direction when said first gear is rotated counterclockwise;

selectively engaging the first gear with the second or third gear in order to selectively move said electrode and said confinement ring;

if said first gear is engaged with said second gear, moving said electrode up and down along said linear path via said first moving shaft; and

if said first gear is engaged with said third gear, moving said confinement ring up and down along said linear path via said second moving shaft.

27. (New) The method as recited in claim 26 further comprising:

processing a substrate inside said plasma process chamber, said processing including etching or deposition; and

selectively moving said confinement ring and said electrode during said processing.

28. (New) The method as recited in claim 25 further comprising:

rotating a third gear;

rotating a fourth gear via said rotating third gear when said third gear is operatively engaged with said fourth gear;

moving a second shaft along a linear path via said rotating third gear, said second shaft moving in a first direction when said third gear is rotated clockwise, said second shaft moving in a second direction when said third gear is rotated counterclockwise;

moving said electrode up and down along said linear path via said moving shaft; and

moving said confinement ring up and down along said linear path via said second moving shaft.

29. (New) The method as recited in claim 27 further comprising:

processing a substrate inside said plasma process chamber, said processing including etching or deposition; and

simultaneously moving said confinement ring and said electrode during said processing.

30. (New) The method as recited in claim 25 further comprising:

processing a substrate inside said plasma process chamber, said processing including etching or deposition; and

only moving said confinement ring during said processing,

wherein the size of a gap provided between said confinement ring and a plane defined by said substrate is changed during said processing by moving said confinement ring along said linear path, the size of said gap effecting said processing.

31. (New) The method as recited in claim 25 further comprising:

processing a substrate inside said plasma process chamber, said processing including etching or deposition; and

only moving said electrode during said processing,

wherein the size of a gap provided between said electrode and a plane defined by said substrate is changed during said processing by moving said electrode along said linear path, the size of said gap effecting said processing.

32. (New) The method as recited in claim 9 wherein the process condition is temperature.

33. (New) The method as recited in claim 9 wherein multple process conditions are monitored and wherein said confinement ring is moved based on said said multiple process conditions, the multiple process conditions including at least temperature and pressure.